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MALOCCLUSION, OR "BUCK TEETH", IN RABBITS 1/

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The permanent teeth of the domestic rabbit consist of four incisors, six premolars, and six molars on the upper jaw; and two incisors, four premolars, and six molars on the lower jaw. The two lower incisors and two upper incisors are large, chisel-shaped, sharp, and well-adapted for gnawing. They grow from persistent pulps and continue to develop during the life of the rabbit to compensate for wear. According to Shadle 2/, when the four large incisors wear normally, the upper ones grow annually about 4 inches and the lower ones 5 inches. The two small upper incisors, or "peg teeth", are rodlike and one is placed directly behind each of the large upper incisors. These peg teeth serve as a protection to the tissues of the roof of the mouth from the cutting edges of the lower incisors.

If the large incisor teeth do not meet at the proper angle and wear normally, they become very long causing malocclusion, a condition known as "buck teeth" (Fig. 1).

Nachtsheim 3/ has described malocclusion as an abnormal, or retarded development of the upper jaw bones, in which the incisors are incorrectly synchronized and are not worn down. The incisors continue to grow rapidly and ultimately appear as curved tusks. While not harming the rabbit directly, this condition makes it difficult for the animal to eat properly or to obtain sufficient food. This can lead to progressive starvation and eventual death.

- 1/ Formerly issued as AHD No. 109 by George S. Templeton, Bureau of Animal Industry, USDA.
- 2/ Shadle, A. R. The Attrition and Extrusive Growth of the Four Major Incisor Teeth of Domestic Rabbits, *J. Mammalogy*, 17(1): 15021. 1936
- 3/ Nachtsheim, H. Erbpathologische untersuchungen am kaninchen. Z. ind. Abst. u. Vererbgs., 73: 463-466.

A young animal with this defect appears more or less normal for the first few weeks of life, but by 8 weeks of age malocclusion can be easily and accurately diagnosed. The only symptom may be abnormally long incisors, with the upper incisors turning inward and the lower ones outward. In more advanced stages the symptoms may include loss of flesh, rough fur, drooling, wet fur on the lower jaw, long incisors, and fur wound around the front teeth.

The inheritance of malocclusion is not fully understood but a single recessive gene appears to be involved. Tests at the U. S. Rabbit Experiment Station seem to verify this type of gene action and it might be said that inheritance of malocclusion follows the same pattern as the inheritance of "Woolly" 4/ and "Yellow Fat" 5/.

Cases of malocclusion also can be due to abscesses in the region of the molars, the jaw, or below the eye. These animals show evidence of pain. The abscesses interfere with normal mastication and wearing of the incisors, and malocclusion develops. Cases due to abscesses must not be confused with the inherited type.

RECOMMENDATIONS

Breeders should make a practice of examining the incisors of all young rabbits that are to be retained or sold for breeding purposes when they are weaned at 2 months of age. Malocclusion, or buck teeth, can be easily and accurately diagnosed at that age, although an occasional case may develop later.

The long incisors of rabbits with malocclusion should be periodically cut back to normal length with a pair of sharp, side-cutting pliers, to make it possible for the animals to eat properly and to attain good condition for slaughter.

Malocclusion is inherited. To eradicate this undesirable characteristic from the herd, no does or bucks should be selected for breeding whose parents have produced young in which malocclusion has developed. Extreme vigilance must be maintained in this matter, because does and bucks, even though they have normal teeth, may yet be carriers of the gene for malocclusion and transmit the characteristic to their offspring.

4/ Bellamy, A. E., Inheritance of "Woolly" in Rabbits.
USDA, ARS, CA-44-36

5/ Casady, R. B.; and A. E. Suitor. Yellow Fat in Rabbits.
Animal Small Stock Farmer, May, 1960

Figure 1. -- Rabbit skulls showing both normal teeth and malocclusion. A, The incisors grew at the proper angle so that development and the wearing-off process progressed normally; the chisel-shaped surfaces of the larger upper and the lower incisors, and the peg teeth, can be seen. B, A typical case of malocclusion, the upper incisors turning inward, the lower ones outward.



